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A REPORT UPON THE
HEALTH CONDITIONS IN
THE PUBLIC SCHOOLS OF
NEW YORK CITY.

BY

THE COMMITTEE ON PUBLIC
HEALTH HOSPITALS, AND BUD-
GET OF THE NEW YORK
ACADEMY OF MEDICINE.

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A REPORT UPON THE HEALTH CONDITIONS IN THE PUBLIC SCHOOLS OF NEW YORK CITY.¹

BY THE COMMITTEE ON PUBLIC HEALTH HOSPITALS,
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MEDICINE.

Objects of the Report.—This study of health conditions in the public schools has been carried on with the following main objects in view:

1. To summarize the present methods of safeguarding the health of school children employed by the Department of Health and the Department of Education.
2. To analyze these methods and their results from a strictly medical point of view.
3. To enlist the interest and cooperation of the medical profession as a whole in the problem of school hygiene.
4. To give medical advice and assistance to the Departments of Health and Education in their efforts to solve these problems.
5. To support the reasonable demands of these Departments for sufficient city funds to maintain proper health conditions in the public schools.

It is desired to make this report, upon the one hand, educational to the general medical profession, and upon the other, helpful to the two departments of the city government which are mainly concerned.

It is inevitable that such a study should contain criticism. We have attempted to offer such criticism in a spirit of helpful suggestion rather than of indiscriminate faultfind-

¹This report has been prepared by E. H. Lewinski-Corwin, Ph.D., Executive Secretary of the Committee, and has been closely supervised and edited by members of the Committee, who are also responsible for the summary and recommendations: Dr. Charles L. Dana, Chairman; Dr. James Alex. Miller, Secretary; Dr. Algernon T. Bristow, Dr. Haven Emerson, Dr. Arpad G. Gerster, Dr. S. S. Goldwater, Dr. Thomas W. Hastings, Dr. L. Emmett Holt, Dr. John H. Huddleston, Dr. Abraham Jacobi, Dr. Theodore C. Janeway, Dr. Egbert Le Fevre, Dr. Samuel Lloyd, Dr. Frank S. Meara, Dr. W. Gilman Thompson, Dr. Linsly R. Williams, Dr. Philip Van Ingen.

ing. This attitude has been the more easy to maintain for the reason that our study has mainly impressed us with the magnitude and complexity of the problem, and with an appreciation that both departments have been making earnest efforts to solve it, in spite of very little outside interest or support.

No body of citizens should be more concerned in matters of school hygiene than physicians, yet none has been more remiss in evincing an interest in them.

Definition of Medical Inspection of School Children and Its Purpose.—Efficient medical inspection includes a complete and detailed physical and mental examination of every child in the school. The purpose of such inspection is: First, to conserve the health of the children, and second, to afford them physical comfort—two indispensable conditions of proper education.

Extent of Its Adoption.—Medical inspection in schools was first made compulsory in Austria in 1873, and was subsequently adopted in Sweden, Argentina, Hungary, Norway, Switzerland, Servia, France, Japan, Roumania, Russia (1899) and Great Britain (1907). In Germany and in the United States it is done locally and is not compulsory.² According to the report of the Child Hygiene Department of the Russell Sage Foundation of 1911, 1038 cities in the United States had medical school inspection.

Reasons for Its Wide Introduction.—The justification of medical examination lies in the fact that large numbers of school children are found to be suffering from physical defects of one kind or another, and that these defects hinder the progress of the child in its growth and in its studies.

Statistics of Defects Found in New York Public School Children.—Of the total number of 231,081 school children examined for non-contagious defects in 1909, 172,112, or 74.4 per cent., were found to be needing treatment. About 60 per cent. of children suffer from bad teeth, 33 per cent. from defects other than teeth alone, 12 per cent. from defective nasal breathing, 15 per cent. have hypertrophied tonsils, etc., as seen from the accompanying table.³

Children Suffering from Communicable Diseases of Eye

²Dr. A. P. Knight, in "Publication" No. 4, issued by the Medical Faculty of Queens University, Kingston, Ontario.

³Monthly Bulletin of the Dept. of Health for April, 1912, p. 101.

and Skin.—Of a total of 674,667 children in public schools, 286,591, or 42 per cent., were found suffering from communicable eye and skin diseases in 1910. More than a half are pediculosis cases, and 16 per cent. trachoma.

The following is a table (from records of the Health Department) showing distribution of these cases by diseases for the years 1909-1911.

Elements of the Health Conditions in Public Schools.—The health work in the schools consists in:

1. Medical examination of school children for contagious and non-contagious defects.
2. The elimination of children found suffering from contagious diseases.
3. Calling of parents' attention to the defects of their children.
4. Direction of children to physicians and dispensaries.
5. Following the children up to see whether they received treatment.
6. Treatment in schools.
7. Instruction in personal hygiene.
8. Physical training instruction.
9. Segregation of backward and mentally defective children.
10. Sanitary care of schools.

The administration of the school health work, as outlined, is in this city, as in almost all of the larger American cities, carried on by the Department of Health and the Department of Education jointly, the work of one, however, not overlapping the work of the other.

1. *The Bureau of Child Hygiene: Its Duties.*—The work which the Health Department does in this connection is under the care of the Division of Child Hygiene, created in August, 1908. Medical inspection and examination of school children is only one of the multifarious duties of the Division. At the present time the activities of the Division in addition to medical inspection of school children are:

1. The control and supervision of midwives.
2. The reduction of infant mortality.
3. The supervision of foundling babies boarded out in homes.

PHYSICAL EXAMINATION FOR NON-CONTAGIOUS DEFECTS.

Number examined	1911 230,243		1910 266,426		1909 231,081	
	Found Defective	Per Cent.	Found Defective	Per Cent.	Found Defective	Per Cent.
Needing treatment.....	166,368	72.2	196,664	73.8	172,112	74.4
Found with defects other than teeth alone.....	75,857	32.9	101,602	38.1	102,150	44.2
With defects of teeth as only defect.....	90,511	39.3	95,062	35.6	69,962	30.2
With defective vision.....	24,514	10.6	29,634	11.1	30,408	13.1
With defective hearing.....	1,491	.6	1,519	.5	2,340	1.0
With defective nasal breathing.....	27,316	11.8	40,946	15.3	43,393	18.7
With hypertrophied tonsils.....	34,639	15.0	50,012	18.7	50,934	22.0
With defective nutrition.....	5,845	2.5	8,691	3.2	7,249	3.1
With pulmonary disease.....	483	.2	656	.2	744	.3
With earldine disease.....	1,661	.7	2,370	.8	1,503	.6
With orthopedic defects.....	1,190	.5	1,683	.5	1,461	.6
With chorea.....	861	.3	951	.6	940	.4
With defective teeth.....	135,843	58.1	164,250	61.6	131,747	57.0
With defective palate.....	85	...	153	...	324	.1
With tuberculous lymph nodes.....	418	.2	759	.2	810	.3
Reported treated ¹	65,150	86.0	64,861	64.0	84,968	83.0

¹These figures do not include children reported with defective teeth as the only defect, whose treatment consisted only of instruction in oral hygiene.

COMMUNICABLE DISEASES OF THE EYES AND SKIN.

Year	Trachoma	Conjunctivitis	Ring-worm	Impetigo	Scabies	Favus	Pediculosis	Molluscum Contagiosum	Miscellaneous	Total
1909.....	45,615	49,807	7,788	12,516	4,006	409	151,585	154	14,621	286,591
1910.....	20,888	26,855	9,052	2,251	1,768	290	153,797	143	41,660	263,828
1911.....	15,245	25,941	4,083	7,713	1,768	220	152,045	96	11,660	248,771

EXCLUSIONS FROM SCHOOL ON ACCOUNT OF MAJOR CONTAGION.

		JANUARY 1 TO JUNE 1, BOROUGH OF MANHATTAN			1912		
		1911					
		Total Number of Exclusions	True Cases	Per Cent.	Total Number of Exclusions	True Cases	Per Cent.
Diphtheria.....		233	34	14.5	165	30	18
Scarlet fever.....		48	32	66.6	47	30	63.8
Measles.....		203	172	85	221	124	56
Chickenpox.....		343	334	99	580	497	85.7
Whooping cough.....		81	81	100	81	57	71
Mumps.....		597	597	100	598	408	68
Erysipelas.....		1	1	100	2	1	50
Tuberculosis.....		89	89	100	13	12	92
TOTAL.....		1,595	1,340		1,707	1,159	

4. The inspection of institutions harboring dependent children.

5. Inspection and sanitary supervision of day nurseries.

6. The enforcement of that part of the Child Labor Law which relates to the issuing of employment certificates.

7. The vaccination of school children.

Organization of the Division of Medical School Inspection.—The organization for the medical inspection of school children is as follows: Director, 1 assistant director, 5 borough chiefs, 15 supervising inspectors, 76 school medical inspectors, 1 superintendent of nurses, and 172 nurses. The duties of the director, the assistant director, the borough chiefs and the superintendent of nurses are not confined to school work exclusively.

The Bureau of Municipal Research criticized the dual system of supervision—one for physicians and one for nurses, as carried on up to Jan. 1, 1912.¹ Since Jan. 1, 1912, the nurses and their supervisor have been under the direction of the Supervisor of Inspectors, in whom all responsibility is centered.

Statistics of the Work of the School Physicians.—For purposes of school medical inspection, the Bureau of Child Hygiene has divided the city into 76 districts, the size of which is based on the number of children in the schools. One medical inspector is assigned to duty in each district. Where the schools are smaller, more of them are found in one district. In Manhattan, Bronx and Brooklyn the number of schools to every inspector averages from 4 to 5, in Richmond the average is 10, and in Queens it is 13. The average number of children to each inspector varies from eight to nine thousand in Brooklyn and Queens and about four thousand in Richmond.

Amount of Time and Work Required of Each Inspector.—There is no definite daily amount of time or work required of the inspectors. On the average, however, they work from 3 to 4 hours daily. They are not required to make a definite number of examinations a day, but they average from 20 to 22 a day each. The frequency of visits to one school depends on the number of schools assigned to each inspector, and how widely the schools are separated from each other. The inspector spends two days in each school in rotation.

¹Report of Bureau of Municipal Research, September, 1911, p. 17.

Frequency of Examinations.—Each child is examined upon entering school and again before graduation and in addition every two and a half years, on the average, in the interim.

The examinations are made chiefly for the various non-contagious or more or less chronic physical defects of the eye, ear, throat, nose, heart, lungs, and joints. The child's clothing is not removed at the examination. One of the reasons for this, given by the New York Department of Health officials is that parents would object to having examinations of girls made by school physicians. Owing to this, as well as to the fact that the length of time allotted to each child is a few minutes at the most, the examinations are not thorough.

Accuracy of Examinations.—How accurate the examinations have been since the formation of the Child Hygiene Division, August 26, 1908, we have no means of telling. In 1908 the Bureau of Municipal Research, in co-operation with the Department of Health, conducted an inquiry into the methods and results of the examinations. It was found then that the inspectors differed widely in the number and kinds of defects found in the same children examined. Discrepancies as great as between 30 and 92 per cent. and between 43 per cent. and 84 per cent. occurred in the same schools, while the variation in percentages found defective in the whole of Manhattan was from 100 per cent. to 32 per cent. and from 100 per cent. to 18 per cent. in Brooklyn.²

Statistics of the Work of School Nurses.—The nurses' districts are assigned similarly to the physicians' districts, on the basis of school population, and its density. In Manhattan and the Bronx two is the average number of schools assigned to a nurse, three in Brooklyn, seven in Queens and five in Richmond. The average number of children to each nurse is: In Manhattan, 4100; Bronx, 3978; Brooklyn, 3965; Queens, 3902; Richmond, 1878; New York City, as a whole, 3968.

The nurses are on duty from 9 to 4 every day with an hour off for lunch, their working day thus being six hours. They make routine examinations, recommend children for exclusion, notify the parents of the defects of their children, instruct the children in personal hygiene, treat minor skin diseases, and follow up cases in the homes.

²Cf. Report of the Bureau of Municipal Research, "A Bureau of Child Hygiene," 1908, p. 11-14.

Details of the Nurses' Work.—1. Exclusion of contagious disease cases. Beginning Jan. 1, 1912, the duty of exclusion of children from school for major and all minor contagions was assigned to the nurse, in accordance with the plan suggested by the Bureau of Municipal Research and tested successfully by the Department of Health, for several months before adoption, in a number of schools.

In the morning the nurse examines all the children referred to her by teachers as suspicious. If she finds any symptoms of a contagious disease she so informs the principal, who excludes the child from the school. In cases of sore throat she takes cultures and excludes the child for a period till the report of the Laboratory is given. If the culture is negative, the child is returned to school, otherwise the case is turned over to the Division of Contagious Diseases. In cases of measles, scarlet fever, chickenpox, whooping cough, erysipelas, mumps, and tuberculosis the nurse, after excluding the child, notifies the school medical inspector, who visits the case at home and makes the diagnosis. From the accompanying table showing the number of exclusions for five corresponding months of last year, and this year, it is evident that nurses exclude more unnecessary cases than physicians. Cases in the Borough of Manhattan are given below, as the complete records for 1911 are available for this borough only.

In cases of scarlet fever 63.8 per cent. of nurses' exclusions were true cases, while 66.6 per cent. were true in cases of physicians'; in measles 56 per cent. were true with nurses and 85 per cent. with physicians; in the case of mumps 78 per cent. were true while 100 per cent. were true with physicians. The small number of true cases of diphtheria on both the physicians' and nurses' diagnoses is due to the fact stated already, that all sore throat cases are excluded. As a rule the nurses are very cautious and exclude all the suspected cases.

The Division of Child Hygiene is of the opinion that the efficiency of nurses in diagnosing contagious diseases is probably as high as that of physicians, but that they are much slower in their work. It is, however, impossible to determine accurately the comparative rapidity of the work of physicians and nurses from the data at the disposal of the Division of Child Hygiene. The experiment is too new to warrant any positive opinion on its expediency. The charge made that the contagion bred in the schools this year was due to the fact that nurses were making ex-

clusions cannot be proven nor does it seem at all probable.

2. Routine examination of children.—Each classroom is, on the average, examined once a month by the nurse. Individual instruction in personal hygiene is given to children, and, in cases of communicable eye and skin diseases, notices to parents are sent out informing them of the condition of the child, and asking to have him treated.

3. Treatment of communicable skin diseases.—If no treatment is obtained, and the child's family is too poor to employ a physician, the nurse treats such cases in the school, following a procedure outlined by the Department of Health. A copy of the instructions to nurses in this respect is found in the appendix to this report. As to the efficacy of this measure, the Monthly Bulletin of the Department of Health for April 1, 1912, says (p. 100): "In this connection it is interesting to note, that the employment of nurses for the treatment in the schools of contagious diseases of the eye and skin has resulted in a marked decrease in the number of exclusions necessary. In 1903, 57,665 children were excluded on account of contagious diseases of the eye and skin, while in 1911 it was necessary to exclude 3361."

From the point of view of the scholastic standing of the children and the diminution of truancy, this decrease in exclusions is a distinct gain.

4. Non-contagious defects.—The non-contagious defects are never treated in schools. Nurses are under positive orders from the Department of Health not to give any treatments in non-contagious diseases, except first aid in emergencies. The nurse tells the children what is the nature of their defects as diagnosed by the medical inspector, and advises them to see a physician. If this fails, she sends for the parents and explains the situation to them, or as the last resort, she visits the homes of the children for the same purpose.

5. The follow-up work.—It is the nurse's duty to see that all the defective cases receive treatment and that all the excluded cases are under the care of physicians. This follow-up part of the medical work in the schools is the most important one. Unless the discovered defects are remedied, medical examinations are an unnecessary expense to the community. Much more stress should be laid on the follow-up work than is being done at the present time, owing to the insufficiency of the staff of nurses to do it thoroughly in each case. In view of the great preval-

ence of defects among the school children, the number of children per nurse is at the present time much too high.

The Cost of Medical Inspection of School Children.—For the year 1911, the costs of the work are given by the Department of Health as follows:

1. The cost of inspection for the detection of contagious diseases amounted to \$0.57 per 1000 children inspected.
2. The cost of each physical examination amounted, on an average, to \$0.007 and
3. The cost of the home visits of the nurses averaged as high as \$0.60 for each case.

STATISTICS OF THE TOTAL COST OF THE SCHOOL MEDICAL WORK COM-
PARATIVELY FOR 1911 AND 1912

1911 SCHOOL WORK	
126 medical inspectors @ \$1,200 per annum.....	\$151,200
134 nurses @ \$900 per annum.....	120,600
260	\$271,800
1912 SCHOOL WORK	
76 medical inspectors @ \$1,200 per annum.....	\$91,200
172 nurses @ \$900 per annum.....	154,800
248	
6 additional inspectors, i.e., supervisors @ \$1,200 per annum.....	7,200
10 additional nurses, i.e., supervisors, @ \$900 per annum.....	9,000
4 medical inspectors (for physical examination of children for employment certificates) @ \$1,200 per annum.....	4,800
	\$267,000

Cost of school work year 1911, \$271,800; 1912, \$267,000; difference, \$4,800.

Advantages of the 1912 System Over That of 1911.—1. *Economy.* In 1911 there was a force of 260 nurses and inspectors at a cost of \$271,800. In 1912 the force was decreased to 248 (that is, the force of those actually working with the school children), the cost being \$267,000. That is, the actual gain in economy is \$4,800.

2. *Increased number of working hours.*—It was thought that there would be a marked increase in the number of hours given to the work as the number of nurses was increased and they were expected to work seven hours a day, while physicians work only four hours. They actually do work 6¾ hours a day, and the inspectors work

$3\frac{3}{4}$ hours a day, so that the total gain by this substitution proves to be 69 hours a day.

$126 \times 3\frac{3}{4} = 472\frac{1}{2}$ hours given by medical inspectors last year.
 $134 \times 6\frac{3}{4} = 904\frac{1}{2}$ " " " nurses

	1377	"	Total
$76 \times 3\frac{3}{4} = 285$	hours	given	by medical inspectors this year.
$172 \times 6\frac{3}{4} = 1161$	"	"	" nurses

1446	"	Total
1377		

69 " a day difference

3. *Increase in physical examinations.*—Under the present system, though the number of inspectors is only 76, the number of inspections made during the first five months of this year was 19,484 larger than it was during the corresponding period of last year with 126 inspectors. The number of physical examinations that the inspectors were able to make this year has been increased from 1169 to 2195 per inspector, which is almost 100% gain.

During 5 months (Jan. 1-June 1), 1911—i.e., in 100 days—126 inspectors made 147,313 inspections, or about 12 a day.

During the same period in 1912, 76 inspectors made 166,797 inspections, or about 20 to 22 a day.

4. *Increase in class inspections.*—The number of inspections of children was 2,244,696 last year and 2,837,038 this year, making a gain of 581,342.

5. *Increase in number of treatments for physical defects received by children owing to stronger pressure by nurses.*—The number of children receiving treatment for physical defects was 74,864 in 1911 and 82,158 in 1912, making a gain of 7,294. The larger number is due to the larger number of nurses.

6. *Increase in total number of home visits by nurses.*—The number of home visits by nurses, which is the most essential part of efficient school work, was, owing to an increase in the staff of nurses, larger by 10,492 cases during the period from January 1 to June 1 of this year than it was during the corresponding period of last year.

	1911	1912
Number of nurses on duty.....	134	172
Number of home visits	95,919	106,411
Average number of calls to each nurse	715	612

Disadvantages of the 1912 System.—The following is a summary of the reports of four borough chiefs, 15 medical supervisors, and 14 supervising nurses with regard to the present system of medical inspection of school children.

I. Morning Inspection for Contagious Diseases.—The reports are unanimous in disapproving of nurses diagnosing and excluding contagious cases, for the following reasons:

(1) Their training has not fitted them for it physically or mentally.

(2) They are overworked and unable, for lack of time, to perform their other duties, especially home visits, which is the essential part of their work. According to the statement of the Board of Health, based on 300 cards selected at random, the amount of time devoted to home visits last year averaged three hours per nurse per day; this year the average is 43 minutes.

(3) There is a duplication of work, because the inspectors have to visit each case excluded.

(4) The nurses exclude many false cases, thereby causing the inspectors to waste much time in making unnecessary visits. From the table on page 9 it can be seen that in 100 days they excluded 1,595 cases, or 16 cases a day, for 150 schools, and in 1912, 17 cases a day for 150 schools, which would seem to take not very much time.

(5) The medical inspector is not able to keep in close touch with the school on account of the infrequency of his visits, so the "school physician" no longer exists and the nurse can not take his place. Principals and parents naturally do not have the same confidence in her judgment that they have in the physician's.

3. Physical examinations.—It is claimed that the increase in the number of examinations made under the present system is not as large as was expected. This is attributed to the many interruptions by nurses and principals and to the fatigue of making examinations for three hours at a stretch. This assertion has no basis

in statistical facts, which prove that the average number of examinations per inspector has almost doubled.

4. *The follow-up work.*—Although the total number of home visits of nurses has increased, the number of visits per nurse decreased, from 715 during the first five months of last year to 612 during the same period of this year.

5. *Consultations with parents.*—The consultations with parents in schools which the physicians were having and the home visits which, up to January 1, 1912, the physicians were making have been discontinued because it was impossible to carry them on under the present system.

6. *Employment certificates.*—Last year the children wishing to apply for employment certificates were referred by the principal to the school physician for physical examination. Owing to the infrequency of the physician's visits this plan has had to be abandoned and the children referred to the borough office of the department, while extra inspectors have had to be detailed to these offices to perform this work.

7. *Tuberculosis.*—The detection of tuberculosis in school children is a matter of vital importance. Last year the inspectors during their morning and routine inspections found many cases requiring immediate exclusion and care. This year the nurses are overlooking these cases, and in any event are unable to make a diagnosis. The results may be seen in this statement:

Number of cases of tuberculosis excluded from schools in Manhattan, January 1 to June 1, 1911, 142; the same period, 1912, 17.

8. *Clerical work.*—In all the reports there are complaints about the time taken for keeping records, and special bitterness is shown against the copying of the health record of the child, which is kept on file by the nurse in the school and copied by her on the class card—an absolutely unnecessary work. The class card goes with the child to different schools and is always on file in the nurse's office.

Cooperation of Parents.—The cooperation of parents in the school medical work is very satisfactory on the whole, although not as effective as it was during the first year. At that time the parents believed treatment to be compulsory. Now they are aware that they need not have their children treated unless they wish to. This knowledge detracts from good results. In many instances it was found that while parents were willing to have their chil-

dren treated, they were unable to give the time necessary for attendance at a dispensary for that purpose. At a written request of the parents a nurse accompanies the child to a dispensary.

Cooperation of Physicians and Dispensaries.—Private physicians and dispensaries lack cooperation and take little interest in the work, which is detrimental to efficiency, as the Department of Health considers a case closed when it receives notice from a physician that the child is under his treatment. The Department does not question the fact that a child is under medical care if a statement to this effect signed by a physician is presented. All the children presenting certificates of treatment are reexamined by the medical inspector, who notes on the child's record and forwards to the Department of Health a statement as to whether, in his opinion, such treatment is adequate. There is no law by which the Department of Health can enforce any further action. The Department has information that some physicians take advantage of this and carry on a trade in certificates sold at 10 cents apiece. A certain druggist is said to be using pads signed by a physician and selling them as certificates for school purposes. He is said to advertise these certificates at moving picture shows. Another physician in the Bronx had certificates printed and sold them at 25 cents apiece.

Out-patient departments of hospitals, dispensaries and clinics to cooperate very little in reporting the results of treatments, although they have been asked many times to do so and special blanks for reporting were distributed among them. The need of free dental clinics is very urgent, as there is a great lack of free dental facilities for the poor.

Cooperation of Principals and Teachers.—In exclusion cases the cooperation is perfect, the principals excluding children whenever they are referred for such purposes by either the inspector or the nurse.

In recommending children to the inspector or the nurse for special examination, cooperation depends largely upon the interest of the teacher or principal in the work. The teachers have so many other duties to attend to that they find little time to devote to inspection of children or to assisting the nurse. They do, however, recommend cases for special examination in instances where marked defects exist.

In helping in follow-up work and in application of corrective measures advised by the inspector the efficiency of cooperation reduces itself again to the personal equation with principals and teachers. All depends on the interest of the individual teacher and principal. In the four downtown schools which were visited the principals showed great interest in the work, and there was perfect cooperation with the work of the nurses.

Results Obtained by the Division of Child Hygiene.—The department reports that during 1911, according to their records, 86 per cent. of the children found to be suffering from defects other than bad teeth were placed under treatment. The following is the record of treatment: ¹(58 per cent. of the cases were reported as under treatment by private physicians.)

Kind of Cases Treated	Number Treated by Private Physicians	Number Treated at Institutions or Dispensaries	Total
Medical	20,621	11,067	31,688
Surgical.....	11,835	10,431	22,266
Glasses.....	5,530	5,666	11,196
TOTAL.....	37,986	27,164	65,150

The number refusing treatment was reported as 6,431 and the number discharged from school as 5352.

II. *Responsibility of the Department of Education in the Matter of the Physical Condition of the Child.*—The Department of Education is at present responsible for three factors in the health condition of the school children; and these are: (1) The sanitary condition of schools; (2) Instruction in physical training, and (3) the segregation of backward and mentally defective children.

The first matter, the sanitary condition of schools, is under the control of three committees of the Board of Education: The Committee on Buildings, which has charge of the planning of the buildings, the placing of furniture, and determining the character of the ventilating plant; the Committee on the Care of Buildings, which has charge of the running of the plants and of the janitors; the

¹Monthly Bulletin of the Department of Health for April, 1912 p. 103.

Committee on Supplies, which has to do with the furnishing of all class room supplies.

The instruction in physical training and the care of backward and mentally defective children are under the City Superintendent of Schools. There is no concentration of all the activities of the Department of Education pertaining to health; there is no uniformity of policy, as the administration is scattered; and there is no localization of responsibility. Orders with regard to health matters travel from committee to committee, undergoing many changes on the way. The janitors, who are theoretically under the orders of the principals, form an independent body under a supervisor of janitors. Instead of being hired to keep the schools in good condition, the schools are farmed out to them on contract. They receive a lump sum of money for which they agree to keep the school in good condition. The results of this system are unsatisfactory. The advisability of changing the system is being considered by the Special Committee on Schools of the Board of Estimate and Apportionment.

Heating and ventilation in the schools of New York City are so poor as to be a matter of great concern. The subject has received much attention on the part of various civic organizations and some studies on heating and ventilation have been made.

There is no consensus of opinion as to the best system of ventilation, but experience has shown that there are serious defects in the artificial plants prevalent in the schools to-day, and many are advocating a return to the old-fashioned method of ventilating solely by open windows. It cannot be said, however, that the system of ventilation by artificial means has had a fair trial, because in most cases the plants have been under the management of janitors who are not fit for handling this kind of delicate machinery. In one or two instances, where the apparatus was intelligently used, the results were found to be satisfactory. But it is the opinion of those people who have had success with the ventilating plants that at present they must be expensive in order to yield good results. Mrs. S. S. Wise visited a number of schools for the Public Education Association and found that in most of them the ventilating systems were out of order, and in some of the rooms the temperature was from 75° to 80° F.

The committee has not inspected the sanitary conditions

of the grammar schools, but it has made an investigation of the high schools, which may be taken as typical cases, because they are under the same management as the other public schools.

1. *Sanitary Conditions of the High Schools.*—(1) System of ventilation.—Only one school reports ventilation by doors and windows, three report direct and indirect ventilation, and the rest have the mechanical apparatus.

(2) Average dimensions of class rooms and average number of students per room.

Feet	Number of Pupils	School
25 x30	30	Richmond Hill
30 x35	35	Bushwick
20 x25x13½	32	Manual Training
26 x26	36	Stuyvesant
21 x25	38	Wadleigh
22 x25	35	Morris
21 x25	33	Erasmus
22 x28	38	Eastern District
28 x22	30-35	Commercial
26½x20½	..	DeWitt Clinton
25 x25	41	High School of Commerce

The size of classes in other schools varies so much that no average can be stated.

(3) Kind of desks used.—Six schools have adjustable desks, others use the non-adjustable kind.

(4) Windows.—There is an average of three windows to a classroom.

(5) Cleaning.—Most of the schools use damp or oiled sawdust for sweeping and cloths or feather dusters for dusting. In the majority of cases the floors and windows are washed once a month, in some only two or three times a year.

(6) Temperature and Humidity.—The average temperature of the classrooms is 68°. In none of the schools is there a test for humidity. In many the heating and ventilating systems are not working properly.

2. *Physical Training.*—No study was made by the committee with reference to the physical training of children in the grammar schools. Inquiries with regard to high school gymnasium equipment and attendance were made by the committee in connection with a study of medical inspection of high school students, and the following is a summary of the conditions found.

The gymnasium equipment in most schools is fairly adequate. Only one, the High School of Commerce, has a swimming pool.

The number of shower baths varies from 1 to 24, with an average of 10 to a school. Seven have none.

Only one school has special exercise rooms for physical defectives.

All the schools except one report that a number of talks on hygiene are given during the year by physical training, or biology teachers, or both. Students are required to pass examinations in hygiene in some of the schools, but not in all.

Gymnastics are generally required twice a week and attendance is compulsory. In all but one school there are periods after lunch. Most of the schools require gymnasium suits for girls but not for boys, the time being too short to allow for change.

The ratio of gymnasium instructors to pupils is, on the average, 1 to 500. At the Curtis High School there is one instructor to 986 students.

3. *Study and Provision for Backward and Defective Children.*—The worst cases of backwardness are selected by the principal and reported to the inspector on graded classes, a physician who visits in various schools and examines mentally and psychologically. If there are enough of these children found in one school, they are put into classes by themselves and a special teacher is engaged. These special teachers are under the direction of one superintendent.

There is a good deal about the system that is lacking. In the first place, the principal does not know "backwardness" in its various phases. Only the worst cases have been examined and segregated, while there are many border-line cases which get no special treatment or instruction. There should be more physicians engaged in this work—one cannot do it satisfactorily. At present the children receive no medical care.

MEDICAL INSPECTION IN HIGH SCHOOLS.—With regard to medical inspection in high schools the following is a summary of the facts obtained, in answer to a questionnaire sent out to all the high schools of the city, some of which were visited in this connection by the Executive Secretary of the Committee.

1. *For contagious diseases.*—Of the eleven schools reporting medical inspection for contagious diseases, ex-

aminations are made by physicians, in five, and by teachers or nurses in the others. In a few instances inspections are made daily and in the others only in suspected cases. Most of the schools keep no records of the number of cases detected. One, however, reports from 25 to 50, and another 31 for last year. A number of schools send the suspected cases home, only two reporting that the Board of Health is notified. On the whole, responsibility is left with the class teachers, who are often indifferent and ignorant in this respect.

The daily list of contagious sick reported to the Board of Health is too long for the teachers to go over every morning, and as a rule little attention is paid to it.

2. *For vision and hearing.*—Five schools report that examinations take place either by a physician or physical training teachers once a year or once a term. All others report that no examinations are made. Only three of the schools reporting examinations keep records, and in them 710 cases were found defective last year. In all of the schools where examinations are made, the pupils are advised to consult a physician or, go to a dispensary. Only three schools require the students to bring from their parents an acknowledgment of the school notice as to their defects.

3. *For defects other than those of eye and ear.*—In seven schools no examinations are made. In two only are general examinations made by a physician. In others they are made by physical training teachers. In one school the examination applies to candidates for athletics only. In the twelve schools reporting examinations, some inspect the students once or twice a year, some once during the school course. One school reports that examinations are made for teeth; another (Wadleigh), where a physician is employed permanently, inspects for teeth, glands, nose, throat, heart, lungs, back, skin, nervous disorders, digestion, and nutrition. Other schools do not specify the kind of examinations made. No special rooms for examinations, outside of the offices of the physical training teachers, are provided. Records are kept in all but one school. Six schools notify the parents of the defects and advise them to have the children treated by physicians and dispensaries. Seven schools give corrective gymnastic exercises.

The number of remediable defective cases found last year was 764 out of a registration of 7,255.

Only two schools examine for tuberculosis, and three for parasitic skin diseases. Only one school (DeWitt Clinton) keeps a record of what is being done after the defects are pointed out to the students and their parents. This school reports 59 cases of flat-foot, 59 cases of scoliosis, 8 cases of hernia, 27 of bad teeth, and 8 miscellaneous ailments rectified.

NEED OF MEDICAL INSPECTION IN PAROCHIAL AND OTHER FREE SCHOOLS.—There are more than 209 parochial and other free schools existing in this city, which are either entirely out of the pale of the Department of Health control, or the control is minimized, owing to the lack of funds for carrying on this work. The Catholic parochial schools alone have, according to the statement of the superintendent of the schools, made at one of the conferences on the health condition of children arranged by the committee, a registration of about 130,000. The schools do not have their own physicians, and the health control existing in them is very unsatisfactory.

Respectfully submitted,

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New York Academy of Medicine.

APPENDIX.

Department of Health, Division of Child Hygiene, Borough of Brooklyn.

Instructions to nurses.—The following methods will hereafter be used in treating children sent to the nurse by the Medical Inspector of schools:

Pediculosis.—Saturate head and hair with equal parts of kerosene and sweet oil, next day wash with solution of potassium carbonate (one teaspoonful to one quart of water), followed by soap and water.

Farus, Ringworm of Scalp.—Scrub with tincture of green soap, cover with flexible collodion. Severe cases: Scrub with tincture of green soap, paint with tincture of iodine and cover with flexible collodion.

Ringworm of Face and Body.—Wash with tincture of green soap, and cover with flexible collodion.

Scabies.—Scrub with tincture of green soap, apply sulphur ointment.

Impetigo.—Remove crusts with tincture of green soap; apply white precipitate ointment.

Molluscum Contagiosum.—Express contents, apply tincture of iodine on cotton tooth pick probe.

Conjunctivitis.—Irrigate with solution of boric acid.

SUMMARY.

The matters pertaining to the health and comfort of the school children are confided partly to the care of the city Health Department and partly to that of the Department of Education. The Health Department does this work through the Bureau of Child Hygiene; the Department of Education through a number of committees.

I. The Department of Health.

1. The work of the Child Hygiene Division is carried on by physicians and nurses.

(1) The duties of the physicians.—The physicians make physical examinations, diagnose suspected contagious disease cases excluded from school, make absentee and other home visits.

(2) The duties of the nurses.—The nurses exclude suspected contagious disease cases, make class inspections, and do follow up work in the homes.

2. The present system differs from the original plan in several particulars.

(1) The nurses exclude suspected cases daily, instead of the physicians who used to visit the assigned schools every morning for that purpose.

(2) The routine class inspections are made by the nurse once a month instead of by the physician once a term as formerly.

(3) The physician visits each school for two days in succession, at an average interval of about ten days, making physical examinations and visiting the excluded and absentee cases, while last year he devoted only the time that was left after the morning inspections to physical examinations in the school last visited.

3. Advantages of the present system.

(1) It has brought about some economy of money.

(2) It has markedly increased the total working hours of the staff by substituting nurses working 7 hours for physicians working 3 to 4 hours daily.

(3) It resulted in an increase of physical examinations made by inspectors almost double that of last year.

(4) The number of treatments for physical defects received by children has increased, due to the better supervision by the increased corps of nurses.

(5) The total number of home visits made by nurses has increased, although the average number of visits per nurse has decreased.

4. Disadvantages of the present system.

(1) The dissatisfaction on the part of some physicians, nurses and school principals with the innovation of having nurses exclude children for contagious diseases.

(2) The loss of school work occasioned by unnecessary exclusions due to faulty diagnosis.

(3) The duplication of work caused by the inspectors visiting excluded cases at their homes to confirm diagnoses.¹

(4) The infrequent visits of the medical inspector to the school instead of former daily visits.

(5) The discontinuance of physicians' consultations with parents.

(6) The discontinuance of medical examinations for "working papers" at the school.²

(7) The overlooking of cases of tuberculosis by nurses in class inspections.

(8) The markedly decreased amount of time devoted to home visits by nurses.

(9) The diminished control of the contagious eye and skin diseases, especially trachoma.

5. The per cent. of New York school children needing treatment for physical defects is over 70, about 40 per cent. are found with defects other than teeth, and as large a number suffer from communicable eye and skin diseases.

6. The proportion of children to one nurse is 3,968, and to one school physician 8,124.

7. The physical examinations are not thorough. The children's clothing is not removed.

8. There is almost a total lack of free dental facilities for poor children.³

¹This is not actually very great, as during the 5 months, Jan.-June, 1911, 16 cases were excluded daily from 150 schools in Manhattan, while in 1912 during the same period the daily average was 17 for 150 schools, or 1 case to every 4 or 5 inspectors.

²5 and 6 entail considerable loss in the efficiency of the system.

³Dr. S. A. Knopf made an investigation of the dental facilities of the dispensaries of New York City for the Public Health Committee of the City Club. He found that over 16 dispensaries have dental departments with the average number of dentists in attendance 1-3. In only three dispensaries are special hours for school children arranged so as not to conflict with school hours.

9. The cooperation of parents in following the advice of the physicians is fairly satisfactory.

10. There is very little cooperation on the part of medical practitioners and dispensaries.

11. The cooperation of teachers and principals varies greatly, according to the individual school. It is largely a matter of the personal interest of the teachers and principals.

12. The high schools have almost no medical inspection or supervision for their students.

13. The parochial and other free schools have no, or very little, medical supervision.

II. *The Department of Education.*

1. The control of the factors affecting the health of school children which are under the care of the Department of Education are scattered among a number of committees, so that there is no concentration of responsibility, which interferes with efficiency of administration.

2. The various matters pertaining to the health of the school child for which the Department of Education is responsible are as follows:

(1) The sanitary conditions of the school rooms, *i. e.* cleanliness, light, ventilation, and temperature.

(2) Proper janitor service.

(3) The detection of and provision for backward and defective children.

(4) Intelligent cooperation on the part of the teachers in the detection and correction of physical or mental defects.

(5) Physical training.

3. With the exception of physical training the control of these factors influencing the health of the child is at present unsatisfactory.

4. Physical training in the schools and the gymnasium equipment may be considered satisfactory.

RECOMMENDATIONS.

1. The present system of medical inspection in the schools by the Department of Health has not had a fair trial and should be continued for another year at least, before any definite judgment as to its efficacy can be safely reached. Meanwhile the possibility of an arrangement by which the physician, rather than the nurse, could see the suspected cases every day and also have frequent consultations with parents should be seriously considered.

2. In addition to their present work, the school inspectors should make a routine inspection of every class at the beginning of each term in order that the control of tuberculosis and some contagious eye and skin diseases may be stricter.

3. The average number of children per nurse and per inspector is too large at the present time. Efforts should be made to make the budget estimates on a basis of school population. In view of the prevalence of physical defects, the average proportion at the present time should be one nurse to every 2,500 children and one physician to every 7,500.

4. Physical examinations should be made more thorough and more frequent. The children, or at least the boys at first, should be stripped to the waist at physical examinations. The present plan of examining the child when it enters school, when it graduates and once in the interim should be changed. A child should be examined when it enters school and then every two years. The examination just before graduation does not have any particular importance.

5. In the nurses' work special emphasis should be laid on the follow up work. The burden of clerical work should be lightened. The unnecessary copying of the nurses' and physicians' record on the class card of the child should be eliminated.

6. The salaries of the nurses should be graded. Instead of their receiving, as a uniform wage, \$900 a year, the initial wage should be \$800, after a certain period of time increased to \$900 and then again to \$1,000. The gradation will act as a stimulus to efficient work.

7. Medical inspection should be instituted in the high schools which are entirely deprived of it at the present time.

8. The city should appropriate money for the enlargement of the force of the Child Hygiene Department so as to enable them to undertake the inspection of parochial and other free schools.

9. The medical practitioners and the dispensaries should be impressed with the importance of this work to the community and be urged to cooperate. Provision for dental clinics should be made, this being done if possible through the existing dispensaries.

10. In the Department of Education the responsibility for the conditions affecting the health of the school child

should be concentrated. An improved organization should be worked out, which would bring under the jurisdiction of one committee the sanitary conditions in schools, the instruction of children in physical training and personal hygiene, the segregation and treatment of backward and mentally defective children, the instruction of teachers in matters of hygiene, mental defects and the commoner diseases in children, and cooperation with the Health Department which is a condition *sine qua non* for successful medical work in the schools.

It is suggested that this might be done by extending the scope of the present Division of Physical Training so as to include in it all of these activities, thus forming a special bureau of school hygiene.

11. There is an urgent need of a larger corps of physicians in order to extend the facilities for the examination and study of backward children.

12. An effort should be made to so modify the present system of employing and supervising janitors of school buildings that the principal of each school should have full authority over and responsibility for the work of the janitor.

